IN THE CLAIMS

Applicants hereby present the claims, their status in the application, and amendments thereto as indicated:

1-106. Canceled.

107. (Original) A method for efficiently driving a laser diode, the method comprising the steps of:

providing a wideband input signal,

providing a power amplifier with a low output impedance suited to drive a laser diode;

generating a wideband output current from the wideband input signal to modulate the laser diode,

operating the power amplifier as a voltage-controlled current driver for the laser diode.

108. (Presently Amended) ~~The method of claim 107, further comprising the steps of~~ A method for efficiently driving a laser diode, the method comprising the steps of:

providing a wideband input signal,

providing a power amplifier with a low output impedance suited to drive a laser diode;

generating a wideband output current from the wideband input signal to modulate the laser diode,

operating the power amplifier as a voltage-controlled current driver for the laser diode;

selecting minimum, maximum, and average power levels for the laser diode;

supplying bias current to the laser diode to operate the laser at the selected average power level; and

supplying wideband modulation to cause the laser output to vary between selected minimum and maximum output power levels.

109. (Original) The method of claim 107, wherein the communication input signal is characterized by a rate of at least 10 Mbits/second and the power amplifier provides output current of at least 100 mA to the laser diode.

110. (Original) The method of claim 107, wherein the power amplifier is operated as a voltage-controlled current source by DC biasing the power amplifier with a gate voltage to provide linear modulation of the laser drive current.

111. (Original) The method of claim 108, wherein modulation of the power amplifier output causes the laser drive current to swing from nearly off to the desired output power with an optical power extinction ratio of at least 10:1.

112. (Original) The method of claim 107, further comprising the step of providing adaptive control of the output power of the laser driver.

113. (Original) The method of claim 107, further comprising the step of controlling the laser output power in multiple discrete steps.

114. (Original) The method of claim 113, wherein the step of controlling the laser output power is accomplished by simultaneously controlling the power amplifier gate bias voltage, bias current of the laser diode, and modulation current of the laser diode using an input signal.

115. (Original) The method of claim 113, wherein the power amplifier output power is controlled in multiple discrete steps with a digital control input signal characterized by at least 2 bits.

116. (Presently Amended) The method of claim ~~113~~ 115, wherein an attenuator is provided, and the digital control input signal is used to attenuate the modulation signal.

117. (Original) The method of claim 108, further comprising the step of imposing a narrowband modulation on the laser drive current.

118. (Original) The method of claim 117, wherein the narrowband modulation is a telemetry signal.

119. (Original) The method of claim 117, wherein the narrowband modulation is a tracking tone

120. (Original) The method of claim 117, wherein the frequency of the narrowband modulation is between 50 Hz and 50 kHz.

121. (Original) The method of claim 108, further comprising the step of monitoring laser bias current.

122. (Original) The method of claim 107, further comprising the step of monitoring peak-to-peak amplitude of the laser modulation current.

123-127. Canceled.